

Governor's Task Force on K-12 Science, Technology, Engineering and Math (STEM) Education

Agenda February 10, 2016. 3-5 pm Location: Dyn corporation main conference room

Present: Ross Gittell, chairman; Susan D'Agostino, Katie Brissette, Barbara Couch, Joyce Craig, Chris Dodge, Tom Hassan, Joe Helble (by phone), Sally Jean, Eric Feldborg, Jeremy Hitchcock, Todd LaMarque, Lauren Provost, Leslie McRobie, Vasu Vasudevan (by phone) and Annie Wallace

Others Present: Brittany Weaver, Governor Hassan's Policy Advisor; Catherine Blake, CEO, Sales Protocol; Carol Miller, DRED; representative from World Academy School (infant to grade 8)

- I. Call to order and introduction by Chair Ross Gittell
- II. Announcements
 - a. Eric Feldborg: Eric Feldborg has accepted a position at NHDoe as Director of the Career and Technical Education Division, and as Director of Adult Professional Development. He will continue as STEM administrator while a replacement is sought; and he will continue as an advisor to the Task Force.
 - b. Lauren Provost: Lauren Provost has accepted a new position at Dartmouth College as Math and Science Outreach Director, leaving her post at University of New Hampshire.
 - c. Joyce Craig: Joyce Craig returns from a leave of absence from the Task Force and will join working groups.
- III. Approval of December 10, 2015 meeting minutes. Robert Hallowell made a motion to accept the minutes; Barbara Couch seconded. The minutes were approved unanimously.
- IV. Task Force working group Progress Reports:

Foundations of STEM working group:

The group reported on work toward two overarching goals:

- Obtain stakeholder input and develop high-level recommendations of the key math concepts necessary for inclusion in the two non-calculus tracks recommended by the Task Force in high school mathematics, specifically: (1) data and statistical analysis track; and (2) linear algebra

track. Where possible, develop list of examples of specific courses that would address these key concepts for each pathway.

Next Steps: Jeremy H., Tom H. and Annie W. are outlining the two non-calculus paths for discussion at their next conference call Feb. 16, 2016.

- Develop recommendation on high-level content of coding course such that it incorporates logical and mathematical reasoning sufficiently to be suitable for fulfilling a high school mathematics course requirement.
- Vasu V. and Joe H. are developing a guidance framework on coding to include logical and mathematical reasoning.
- Reported by Joe Helble and Jeremy Hitchcock

Empowering Teachers working group:

The working group invited Nicole Heimark, State Administrator of Educator Preparation NH DoE to provide a briefing on NHDoe work on micro-credentialing.

- The NH DoE has formed a working group sponsored by CCSSO known as the Network for Transforming Educator Preparation (NTEP). This group is part of a consortium of 16 states across the country with a goal of creating a shared framework for educator preparation and continuing career development including: career ladders, tiered credentials including micro-credentialing. NH was invited to a member of this network as a result of their policy work within state to enrich all efforts related to educator prep. The goal is to develop a master framework within which credentialing can be developed that is consistent, responsive to NH market needs and sustainable. They are tasked by CCSSO to report out their work by August 2017. Todd LaMarque will participate in the work as a representative of the TF and the NH Principals Association. The working group, by consensus Defer further development of micro credential frameworks until NTEP finishes its work. However, the Working Group will continue to collect best practice models of micro credentials content/subject matter in science, math and STEM integration teaching) to share with the NTEP
- The working group will move on to their next goal which is to investigate opportunities for professional development for STEM K-12 teachers available throughout New Hampshire and to encourage collaboration among the various professional development providers.
- Reported by Todd LaMarque

Inspiring Students working groups:

- NH Math and Science Academy team: The working team, led by Susan D'Agostino, is planning a national design conference to be held at Southern NH University's Sandbox Collaborative, the R&D arm of strategy and innovation at SNHU.

- The Academy as currently envisioned will provide early college opportunities for juniors and seniors, with a focus on reaching underserved populations.
 - Funding for the Design Day will be provided by SNHU.
 - The event is planned for either April or May, 2017. More details later.
 - Maximum of 50 education and industry stakeholders will be invited (though fewer than 50 may be desired)
 - One outcome of the Design Conference will be to produce a formal portfolio similar to one that startups present to venture capitalists or schools present on grant applications. The portfolio will: (a) Draft broad parameters for the idea of the school for interested investors or hosts and show depth of thought with regard to potential challenges.
 - Reported by Susan D'Agostino.
- Personal/Individual Learning Plans and Pathways team:
 - Personal Learning Plans and Pathways working group, led by Barbara Couch, formed an advisory committee to develop the framework and tools with the goal of proposing a pilot by June 2016 to help middle school students learn about career options fueled by STEM studies. The Advisory Committee members include: Chris Dodge, Drs. Brian Blake and Joanne Roberts; Kathi Termini. Chair: Barbara Couch. The group focused on (a) a common definition for Personal Learning Plans (b) definition of purpose and outcomes for PLPs (c) to collect and learning from “best practices” and useful tools for support PLPs.
 - By June the PLP Advisory Committee intends to provide a guidance document for the NH Department of Education, policymakers and school districts which provides a framework to help NH school districts to implement PLPs beginning in 7th grade. This includes integration of career interests and planning into Career and Technical Education and academic planning to begin in 7th grade and continue throughout high school.
 - Reported by Barbara Couch
- CTEs – Early College and modernization of CTE curriculum team
 - CTE in New Hampshire are closely aligned and working with the Community College System of NH on developing career pathways and will be focusing on the 12th grade year and the potential for early college, with apprenticeships, and work-based experiences as part of a “fusion” year for career pathways. Initial efforts will be in the areas of health care, IT and advanced manufacturing, which are large employment/demand areas. Further, CTEs are working closely with NHDOE on a pathways grant so that several entities can develop/strengthen career pathways.
 - The Task Force, CTE, DOE and CCSNH are all aligning with a common vision for developing career pathways. Next steps are to form a state-wide advisory board for IT as a starting point as well as doing some data gathering and analysis to identify employment demand which will assist in developing specific pathways. A specific

timeline has not been established; however, the plan is to have an advisory board formed and data mined by June, 2017. A link to the potential grant program was provided http://www.ccsso.org/Resources/Programs/Career_Readiness_Initiative.html.

- Reported by Chris Dodge
- Challenges, Competitions and Capstones team:
 - The focus on this group is to develop opportunities to expand the FIRST® competitions held in many schools throughout NH. A meeting will be scheduled with FIRST representative Donn Bossi and Bob Hallowell., Chancellor Gittell, Brittany Weaver and others.
 - Reported by Bob Hallowell
- Girls in STEM team (see report from Girls in STEM NH High Tech Council Ambassadors Week below).
 - Reviewing various programs and research that has been done on Girls in STEM. Question: are there any micro ideas that the group can focus on (research representing macro issues).
 - Reported by Lauren Provost

Communications and Engagement working group:

The working group reviewed website developer (Simplify) for possible franchising of software architecture. However, after discussion and user experience testing, the group decided to continue its search for a website solution. The group plans to meet with area website developers to learn about options. Buck Beaudoin, TF working group lead, will present a user experience testing and implementation plan Reported by M. Parker

V. Task Force discussion: organizational issues

a. MIT Teaching & Learning Lab visit update: Jeremy Hitchcock reported that the Professor Eric Klopfer Director, and colleagues from MIT Scheller Teacher Education Program & The Education Arcade will visit Manchester High School March 11 to discuss ways that the High School and MIT Lab might partner to develop and integrate coding across the curriculum.

b. NHCUC Meeting update: Martha Parker reported that the NH College and University Council hosted a special convening with higher education leaders in December to learn about the Gov. STEM K-12 Task Force work and explore ways to partner going forward. At the event, Chancellor Gittell announced a partnership with Achieve America. Next steps: meeting with Tom Horgan, President NHCUC, to discuss options for partnerships.

c. NHCF work on STEM issues: Eric Feldborg, NHDoE and Task Force member met with NH Charitable Foundation STEM project consultant, Tanna Clews, to learn how the TF and the NHCF might partner. Eric reported that NHCF is focused on building out CTE courses in IT and that the NHDoE and NHCF may work together to pursue a major grant opportunity (see website address listed above in CTE report). Reported by Eric Feldborg.

VI. Public input

- a. Update from the Women/Girls in STEM NH High Tech Council –Girls in STEM Ambassadors Week Nov. 16-20, 2015. Catherine Blake, CEO, Sales Protocol and Susan Miller, Department of Resources and Economic Development, presented the results of Girls in STEM outreach to 9th grade girls Nov. 16-20, 2015. A PDF of their presentation is attached. Among the results: regardless of geographical location (region/urban/rural), 9th grade girls reported “social supports” were critical to developing expectations of a degree in a tech field. See attachment.
- b. World Academy: Representative provided brief overview of World Academy for infant through 8th grade students. See www.worldacademynh.com
- c. Leslie McRobie: **When Worlds Collide: Developing Partnerships Between Industry and the Classroom. Scheduled for March 4.** This workshop will bring together teachers, employers in advanced manufacturing fields, and community college faculty involved in career training opportunities and pathways. Teachers will learn what modern manufacturing looks like in NH and will tour a local Manufacturing Facility that specializes in the production of Carbon Fiber parts in the Aerospace Industry. <http://www.cvent.com/d/rfqgqt/4W>

VII. Other business:

Poll will be sent week to Task Force members the week of Feb 15 to schedule Task Force meetings for March-May.